Sullys Hill National Game Preserve -
Narrative Report - 1969

UNITED STATES DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

BUREAU OF SPORT FISHERIES AND WILDLIFE

NARRATIVE REPORT FOR

SULLYS HILL NATIONAL GAME RRESERVE

FORT TOTTEN, NORTH DAKOTA

AND

EASEMENT REFUGES OF DISTRICT NO. 2

CALENDAR YEAR 1969

Refuge Manager (E.O.D. 9/8)	David E. Goeke
Refuge Manager (Transferred 8/15)	David L. Gilbert
Biological Technician	Irvin A. Nelson
Painter-Maintenance (5/18 - 9/27)	Louis E. Zieman
Biological Aid (6/2 - 9/5)	Robert L. Brown

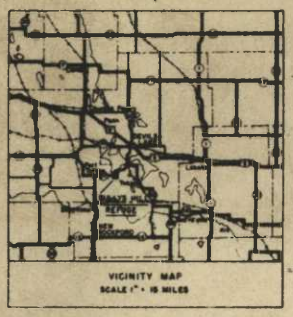
C O N T E N T S

SULLYS HILL NATIONAL WILDLIFE REFUGE

BENSON COUNTY, NORTH DAKOTA

UNITED STATES
DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE



99°02' 99°00' R 65 W 98°58' 98°56'

48°00'

47°58'

47°54'

DEVILS LAKE

BENSON COUNTY
RAMSEY COUNTY

RAMSEY COUNTY
BENSON COUNTY

UNIT I

UNIT II

OLD MILITARY RESERVATION BOUNDARY

NORTH DAKOTA STATE HIGHWAY

FORT TOTTEN

OLD MILITARY RESERVATION BOUNDARY

T 152 N

T 151 N

8 17 16 14 13

19 20 21 22 23 24

30 29 28 27 26 25

31 32 33 34 35 36

6 5 4 3 2 1

7 8 9 10 11 12

18 17 16 15 14 13

99°02' 99°00' R 65 W 98°58' 98°56'

COMPILED IN THE BRANCH OF ENGINEERING
FROM SURVEYS BY G.L.O. AND U.S.F.&W.

FIFTH PRINCIPAL MERIDIAN

0 80 40 80 120 160 CHAINS
0 1/4 1/2 1 1 1/2 2 MILES

TOWNSHIP DIAGRAM

MEAN DECLINATION 1966

MINNEAPOLIS, MINNESOTA DECEMBER, 1958

3 R ND 81

I. GENERAL

A. Description of the Area

The 1,674-acre preserve consists mainly of large, wooded terminal moraine hills, located on the south shore of Devils Lake in northeast North Dakota. The largest of the hills was named for General Alfred Sully, who led a campaign against the Sioux in 1865.

The area, established as a national park in 1904, is rich in Indian and early military history. Several Indian burial mounds on the preserve are thought to be over 600 years old. What is now our big-game pasture provided logs and clay bricks for the building of Fort Totten (one mile west) in 1867. The fort is now a state historical park.

Primary emphasis in management of the preserve is placed on outdoor education and wildlife-oriented recreation. Public use during 1969 totaled 34,700 visits, most of which were for picnicking and driving the self-guided auto route through the 700-acre big-game enclosure. Summer big-game herds in 1969 totaled 37 bison, 29 elk and 30 white-tailed deer. The 60-acre Sweetwater Lake recreation area contains a 12-acre lake on which is kept a display flock of waterfowl consisting of whistling swans, two races of Canada geese, blue and snow geese, and newly acquired white-fronted geese. A variety of wild ducks and shorebirds are also present as are muskrats and beaver.

Also administered from Sully's Hill are Stump Lake NWR and the following twelve easement refuges which total approximately 28,000 acres.

Brumba Lake NWR	Lambs Lake NWR	Sibley Lake NWR
Buffalo Lake NWR	Little Goose L NWR	Silver Lake NWR
Johnson Lake NWR	Pleasant Lake NWR	Snyder Lake NWR
Lac Aux Mortes NWR	Rock Lake NWR	Wood Lake NWR

B. Weather

The year started out in a blast of snow with over twice the normal snowfall during January and February. Luckily for all involved, this initial blast was followed by less than half the normal precipitation during March, April and May. To look around the area, though, no one would believe it was a dry spring. Thawing first began on March 16 and soon resulted in

	Temperatures *				Precipitation		
	Max.	Ave. Max.	Min.	Ave. Min.	Precip.	Snow	Normal Precip.
Jan.	27	(4.7)	-26	(-12.0)	1.25	18.2	.53
Feb.	32	(18.5)	-28	(3.8)	1.24	13.7	.65
Mar.	40	(24.8)	-16	(5.1)	.29	3.6	.77
Apr.	68	(54.1)	1	(33.3)	.39	T	1.15
May	95	(68.1)	29	(42.3)	1.31		2.11
Jun.	79	(68.6)	32	(46.2)	3.17		3.36
Jul.	97	(79.2)	45	(56.8)	2.42		2.57
Aug.	98	(87.2)	47	(57.8)	.68		2.18
Sep.	93	(71.7)	32	(46.9)	2.49		1.70
Oct.	64	(48.1)	16	(31.3)	.98	1.1	1.07
Nov.	62	(38.9)	3	(21.3)	.05	.6	.68
Dec.	59	(24.5)	-15	(7.9)	.51	7.4	.52
					14.78	44.6	17.29

* These records are from the official weather station maintained by the KDLR radio station in Devils Lake, 11 air miles NE of Sullys Hill. Actual temperatures are often 5-10° cooler at the preserve throughout the year.

widespread flooding over the area. Thanks to the extensive wetland drainage system the flooding caused much more damage than has occurred in past years, when marshes held the water and released it more slowly.

Summer started out unusually cool during June and didn't warm up to normal levels until the second week of July. A heavy frost June 23, caused extensive local crop damage. August was very dry but a 1.16" rain on September 4 eased the situation.

The first heavy frost of the fall occurred on October 8 and was followed by the first snowfall on October 10. Continued mild weather, however, kept the ground generally clear of snow until December 6 when the snow cover became permanent. The open fall allowed widespread pothole burning by area landowners.

C. Habitat Conditions

1. Water. Thawing began at the preserve on March 16. Sweetwater Lake was partially open on April 12 and was ice-free on April 19. Devils Lake was ice-free on April 25. The preserve was only slightly affected by the high runoff of the area. Some road-washing occurred at the east end of Sweetwater Lake.

The springs in the big-game enclosure continued to run all summer and on past freeze-up, providing plenty of drinking water for the animals. The Mauvais Coulee also continued to run throughout the year and has brought the level of Devils Lake to within 18" of the road level of highway 57. It could easily be that the highway will go under this spring.

Sweetwater Lake first froze over on October 27, but opened again three days later and did not freeze permanently until November 18. Half of Devils Lake was frozen by November 14 and the rest closed by November 18.

2. Food and Cover. With the low spring precipitation grasses got off to a slow start. Growth, however, was excellent during the rest of the year and the range in the enclosure was in fine shape going into the winter. Hay production in Unit II was also slow in starting and required a second cutting to get the necessary winter supply for the big game. Approximately six acres of brush in the enclosure were moved to reduce competition with grasses.

Buffaloberry and Chokecherry production was about normal but the Juneberry crop was destroyed completely by the June 23

frost. Acorn production was almost zero.

As has happened occasionally in the past years, forest tent caterpillars were active in the wooded area along highway 57. Damage occurred to approximately 1000 acres of timber, most of which was adjacent to but not on the preserve. About 100 acres within the big-game enclosure and along the tour route were affected. Although unsightly, no permanent damage occurred and no treatment of the area was attempted. The infestation did arouse concern among the visiting public and would have been treated had it neared the recreation area. If the infestation is repeated in 1970, a cooperative effort may be attempted with North Dakota State University to aerially treat the area with a bacterial control.

II. WILDLIFE

A. Migratory Birds

1. Geese. The captive goose flock presently consists of 21 giant Canadas, 3 small Canadas, 9 snows, 3 blues, and 2 white-fronts. In return for a whistling swan and ten geese, we are also wintering eight geese of four species for the Devils Lake School for the Deaf. One snow, two blues, and one white-front were also transferred fron the NPWRC in Jamestown. Including our four whistling swans the preserve's display flock now totals 42 birds, a net increase of 17 birds during the year. Our goal is to display a representative number of as many of the species of waterfowl native to this area as possible. Interpretive facilities will be added during 1970 to help teach waterfowl identification and ecology.

Five pairs of captive Canada geese nested on Sweetwater Lake (3 on islands, 1 on a raft, and 1 on shore) and another pair nested in the goose house. The pair in the goose house hatched only one gosling and one island nest and the one raft nest hatched producing eight more goslings. One gosling died during the summer.

When the geese were rounded up for the winter, seven Canadas were missing. The remains of one that may have fallen prey to a pair of immature bald eagles were found along the lake. Since almost half of the Canadas are flyers and only a few of the adults and none of the goslings are banded, the ages of the six birds still missing are unknown. It is likely that some or all of them were shot while flying around during the hunting season. Hopefully, some of them migrated.

No wild geese used the preserve or the adjoining area of Devils Lake during the year. The first migrants observed passing over the area, however, were 300 Canadas and 100 blues and snows on April 6.

2. Ducks. The first migrants to arrive were four mallards on April 12, thirteen days later than in 1968. Spring migration peaked April 30 and had passed by May 23.

Two mallard broods with a total of 13 young (4, 9) were observed on Sweetwater Lake. Three mallard broods with a total of 16 young and a ruddy brood with 5 young were observed along the Sully's Hill shore of Devils Lake. A pair of wood ducks was often observed on Sweetwater Lake during the spring and early summer but no brood appeared.

The fall buildup began in earnest during the first week of August. A white-winged scoter observed along Devils Lake on August 22 and a black duck observed on Sweetwater Lake, October 30 are the first recorded observations of these species for this station. The variety and number of ducks remained high until the second week of November. Temperatures in the low teens accompanied by 40 mph. winds on November 13 forced on all but a few stragglers that stayed a few more days with our geese.

The 20-mile Brood Chronology Survey was run from Fort Totten to Warwick again in 1969. The route includes 60 water areas with basins totaling 445 acrea.

		Water Area	Broods seen Dabblers	Broods seen Divers	Cor. for visibility Dab.	Cor. for visibility Div.	Cor. for visibility Total	Young Coots Seen	Cor. Total Young
1967	7/13	352A	10	5	22	6	28	83	153
	8/16		21	8	32	9	41	45	88
							69		241
1968	7/18	265	12	7	34	11	45	28	78
	8/16		6		10		10	21	36
							55		114
1969	7/11	337	5	6	11	8	19	62	169
	8/18	273	3	2	4	3	7	33	82
							26		251

3. Whistling Swans. Of the three swans wintered with the goose flock last winter only one remained at the end of summer. One died of injuries received from dogs in the goose pen March 1 (3 of the 4 dogs were shot). Another swan apparently recovered from the crippling injuries that brought it to us in the fall of 1968 and disappeared after the molt.

During the fall three more swans, two adults and one cygnet, crippled by hunters were brought to us. The cygnet died a few weeks later during the first blast of near zero weather. A fourth swan with a mangled wing was captured by preserve personnel a few miles south of the preserve. (You can forget trying to catch even a crippled swan without an outboard motor!) The wing was amputated at the preserve. Our whistling swans now total four and all three of the 1969 cripples are in good shape and have adjusted to captivity.

Migrant swans were frequently observed flying over the preserve during the spring and fall but no swans used their usual Devils Lake feeding area along highway 57.

4. Coots. Coot-use-days for the year totaled 17,241, up considerably over the 600 use-days of 1968. This increase reflects the higher water level of Devils Lake and in turn the better habitat conditions in Fort Totten Bay during the fall. The first observation of 20 coots on April 30 was also the spring high. There were practically no birds present during the spring and even fewer during the summer. The fall build-up began with the arrival of 220 coots during the second week of August. They peaked at 750 on August 26 and then tapered off until the last one was observed on November 7. No coots used Sweetwater Lake.

5. Other Waterbirds and Shorebirds. Our first ring-billed gulls arrived on April 6, Franklin's gulls on April 25 and double-crested cormorants on April 30. A common egret was observed along the bay on June 5. Franklin's gull numbers began to increase in early July and peaked at 1200 on August 8. Northern phalaropes peaked at 300 on July 25 and Wilson's phalaropes peaked at 450 on August 22.

Western grebe use of Fort Totten Bay has been increasing over the last few years. This year their numbers began to increase in mid-July and reached a peak of 257 on August 22. They remained common throughout September and were last observed on October 2.

During early September several possible whooping crane reports along the west side of Devils Lake were checked out by preserve personnel. No cranes were found but several common egrets were observed.

6. Mourning Doves. Doves are not abundant at Sully's Hill. The first migrants were observed April 15. A few pairs may nest in the shelter belts in Unit II.

B. Upland Game Birds.

1. Sharp-tailed Grouse. The local population remains moderate and stable. One broody hen was observed on the hay unit July 28.

2. Gray Partridge. Local numbers are low. Only one partridge was observed on the preserve, and that one was first noticed just after dawn by a white-tailed doe that was in turn being watched by the manager and his wife. The doe was standing on the residence lawn watching the partridge as it walked across the lawn and around the house.

3. Ring-necked Pheasant. In this area the pheasant belongs on the rare and endangered list. One group of three hens was observed April 6 near the culvert plant along highway 57. The only pheasant observed on the preserve was a lone hen observed December 5 in the Sweetwater Lake recreation area.

C. Big-Game Animals

1. Bison. At the beginning of the period the bison herd totaled 31 animals. A total of six calves were produced, two during the last week of April, two during the first week of May, and the last two during mid-May. This brought the herd total to 37 during the period of highest visitor use.

	Bulls				Cows			
	Mature	2 Yr.	1 Yr.	Calves	Mature	2 Yr.	1 Yr.	Calves
Spring '69	3	3	7		12	3	3	
	(11,5,3 yrs.)							
Births				5				1
Removed		-3			-3			
Dec. '69	3		7	5	9	3	3	1
Spring '70	3	7	5		12	3	1	

Herd productivity based on 12 mature cows was 50%. There were no losses due to disease or accident. Of the six calves the one heifer was vaccinated for Brucellosis on November 12.

Three two-year-old bulls and three mature cows were butchered and sold during the fall disposal. Weights of the dressed carcasses were as follows:

3 - 2½ yr. Bulls	546		
	484	Average 525	
	544		
			Average 530
3 - Cows: 11yrs.	486		
10yrs.	540	Average 535	
?	578		

Blood samples from all six bison tested negative for Brucellosis.

Supplemental feeding of hay and grain cubes is conducted three times per week from December through March. The cubes were made using preserve grain by Nakota Feeds, Devils Lake.

Sully's Hill Barley	7480#	--	--
Purina Range Concentrate	1800#	$5.70/100#	$102.60
Molasses	588#	3.50/100#	20.58
Vitamin A	9#	1.00/#	9.00
Vitamin D	5#	.25/#	1.25
Grinding & Cubing		7.00/T	34.13
Delivery		2.25/T	10.97
Delivered Weight	9750#		$178.53

Problem. Routine checks of the condition of the animals butchered disclosed the presence of a mummified fetus approximately 18 inches long in the uterus of one of the bison cows. Discussion of the case with two local veterinarians indicated three possible causes: old age, brucellosis, or inbreeding. Old age can probably be ruled out since the cow was only 11 years old which is more middle age than old age for bison. Brucellosis can be ruled out since the cow was vaccinated for this disease and the blood samples taken when she was shot tested negative. A reasonable possibility is that of inbreeding, especially in light of the fact that two of the three mature bulls are sons of the oldest.

With the possibility of inbreeding in mind, a check of the records pertaining to all three of our big-game herds was conducted. The following table lists all recorded introductions of new stock to these herds. Discussion of the condition of each herd with respect to inbreeding is found with the respective herd shot status report.

Species	Year	Number	Source
Buffalo	1918	6	Portland, Oregon
	1933	1 bull	Wind Cave Nat. Park
	1941	1 bull	Fort Niobrara NWR
	1949	1 bull	Fort Niobrara NWR
	1952	1 bull	National Bison Range
	1956	1 bull	Fort Niobrara NWR
	1959	1 bull	Fort Niobrara NWR
Elk:	1917	15	Yellowstone Nat. Park
	1941	1 bull	Fort Niobrara NWR
	1944	1 bull	Fort Niobrara NWR
	1949	1 bull	Fort Niobrara NWR
	1956	1 bull	Fort Niobrara NWR
	1959	1 bull*	Fort Niobrara NWR
Deer:	1917	4	Fargo, North Dakota
	1947	1 buck**	Camp Grafton, N. D.
	1952	1 buck***	Local

* Poor quality animal shot in 1960

** Tame

*** Locally caught as fawn and raised by manager's children.

As you can see from the above table, the last new bison bull was introduced in 1959. He is now 11 years old and since the past September has become a loner after losing at least one spectacular battle with his five-year-old son. No apparent physical harm was done to either bull, but the question is whether or not the older bull will regain his position with the herd and be effective during the next breeding season. If not, a home-grown bull will take over and the inbreeding will be even more intense. We must assume that the 11-year-old bull has been an effective breeder for the last nine years and that all females born in that time have in turn been bred by the same bull, or possibly one of his sons, each season since they matured.

The fact that there have been no apparent morphological indicators of inbreeding in recent years does not alter the definate fact that inbreeding has been common within the herd. Physiological changes that might not be outwardly apparent could easily be accumulating over the long period of years. These could be expressed as subtle changes in organ size or weight, as metabolic changes, or in other ways that slowly change the nature of the beast.

Recommendations have already been made concerning acquisition of new stock.

2. Elk. At the beginning of the period the elk herd totaled 22 animals. During the spring seven calves were produced, bringing the herd total during peak visitor use to 29. It is believed that one cow had twin calves. If so, then productivity based on ten mature cows was 60%.

During the fall disposal six yearling or spike bulls were butchered and sold. Carcass weights were obtained on three of these animals, 216, 234, and 246 pounds. No animals were lost to disease or accident. The period ended with 23 elk in the herd.

	Mature Bulls	1 Yr. Bulls	Mature Cows	1 Yr. Cows	Calves
Spring '69	2(6,9 yrs)	7	10	3	
Births					7
Removed		-6			
Dec. '69	2	1	10	3	7

Problem: Inbreeding within the elk herd may be building up to future problems. Presently there are no observed problems, but as can be seen from the table on the preceeding page, there have been no additions of new animals since 1956. The male calf introduced in 1959 cannot be counted since it was shot the following year as a yearling before it was old enough to breed. All three of the bulls that are now mature are animals produced here. As with the bison, this is a potentially bad situation.

3. White-tailed Deer. An aerial census 1/8/69 indicated a herd number at that time of 24. On March 3 a deer was found dead near the corral after being gored by a bison. A deer killed by dogs was found on April 1 and one of the dogs shot. Another deer apparently killed by dogs was found on April 17. This brought deer numbers to 21 going into the fawning season. Eight deer were removed during the fall disposal and donated to the Devils Lake School for the Deaf. Of the eight removed, there were four bucks (ages 1½, 2½, 3½, 5½) and four does (ages ½, ½, 2½, 3½,).

During an aerial census 2/3/70, 18 deer were observed. Assuming 80% observed, the present winter population numbers 22. Considering the animals removed and the 1/8/69 census and assuming no other losses, this indicates a fawn production of approximately nine in 1969.

Approximately 5-10 other deer take refuge in Unit II and the Sweetwater Lake recreation area. Year-round uncontrolled hunting of the reservation lands around the preserve by local Indians puts severe pressure on the local deer population.

Problem: Inbreeding within the captive deer herd is expressing itself in at least one morphological change concentrated by the herd's restricted gene pool. Better than half the deer now have tails that are black on the dorsal surface, a frequency believed to be much higher than occurs in the wild. From the table on page 9, it can be seen that only two bucks have been introduced into the herd in the 52 years since the original four deer were released in 1917. What other unnoticed changes are occurring is open to speculation. Our black-tailed whitetails, however, are not truly representative of the species as a whole.

B. Small Mammals.

1. Muskrats. Muskrats were relatively plentiful in Sweetwater Lake. During early November before freeze-up as many as 12 could be seen at one time during daylight hours. With no house-building materials available all dens are bank dens. Two muskrat houses are present on the small area of refuge marsh in Fort Totten bay of Devils Lake south of highway 57.

2. Mink and Weasels. No animals were observed, but mink tracks are occasionally found around Sweetwater Lake.

3. Beaver. Two young beaver were live-trapped from the Sheyenne River by WAE Zieman and released into Sweetwater Lake in September. They soon took over an old shoreline lodge, restored it to their needs, and set about stocking the pantry. Under careful control it is hoped they will be compatible with the heavy visitor use of the Sweetwater Lake recreation area and will provide interpretive possibilities for the public.

4. Raccoons. These nocturnal trash-can-raiders and duck-nest-destroyers are still abundant. Though seldom seen, they continue to empty trash cans in the recreation area and practically eliminate shoreline waterfowl nesting at Sweetwater Lake. There were no removals during 1969.

5. Foxes. Tracks and fall sightings indicate a relatively high number of red foxes present in the big-game unit. With the foxes at night and the magpies during the day offal from the big-game disposal is quickly cleaned up. No gray foxes were observed.

6. Skunks and Badgers. None were observed.

7. Rabbits and Hares. Cottontail numbers are quite low with only occasional sightings of a few individuals living around headquarters and the boneyard. No snowshoes were observed but their tracks were occasionally found in the woods. No jackrabbits were observed.

8. Squirrels. Both gray and fox squirrels are abundant with gray squirrels being observed somewhat more frequently.

9. Woodchucks. Woodchuck numbers were lower than 1968 with only a few sightings around headquarters and near an active den in the recreation area.

10. Mice. A concerted attack using anticoagulant poison during the fall eradicated a bad mouse problem in the barn. The presence of stored grain and the deteriorating concrete floor had encouraged a mouse paradise.

E. Predaceous Birds.

1. Eagles. One adult bald eagle was observed March 21. Two immature bald eagles, first observed October 23, hung around Sweetwater Lake until November 8. The remains of one of our resident Canada geese that may have fallen prey to the eagles were found on the lake shore. On at least two occasions the eagles were seen to harass the migrant ducks concentrated on the lake. They may have been successful in capturing cripples that made it into the preserve. Another single immature bald eagle was observed on November 25.

2. Ospreys. Two ospreys were observed along the Devils Lake shore of the preserve on May 2. This was the first recorded observation of this species at the preserve.

3. Hawks. Hawks commonly observed during the summer months were the red-tailed, marsh, and sparrow hawks. During the fall several sharp-shinned hawks were also observed.

4. Crows. The first migrant crows were observed March 19 and the largest spring flock numbered 80 on April 7. A large fall flock of approximately 400 was present for several days during the first week of October. As was the case in 1968, two crows are again wintering near the corral.

5. Magpies. Magpies are year-round residents most common during the fall and winter. Peak numbers occur during the fall animal disposal. As many as seven or eight are observed at one time feeding on a pile of offal.

F. Other Birds

Until 1970 no official bird list for Sully's Hill had been

published and records were scattered. A list of 266 species likely to be observed at the preserve, including 165 species already recorded, is now working its way through the Government Printing Office. The following species are believed to have been new records during 1969.

5/2	Osprey (2)	10/30	Black Duck (1)
8/22	White-winged Scoter (1)	12/30	Purple Finch (6)

The annual Christmas bird count was conducted December 30. A total of 238 birds of 16 species was observed.

Sharp-tailed Grouse	24	Black-capped Chickadee	18
Gray Partridge	11	White-breasted Nuthatch	4
Rock Dove	30	House Sparrow	12
Hairy Woodpecker	3	Purple Finch	6
Downy Woodpecker	5	Pine Grosbeak	24
Blue Jay	8	Common Redpoll	81
Black-billed Magpie	7	Oregon Junco	1
Common Crow	2	Snow Bunting	2

G. Fish.

Going into freeze-up Sweetwater Lake had a high population of fathead minnows and a lower number of sticklebacks. Before they froze over, several small air holes kept open by the minnows supplied an easy fish dinner for magpies and a variety of small mammals.

H. Reptiles and Amphibians

Painted turtles were common in Sweetwater Lake. Plains garter snakes were frequently observed and occasional observations of red-bellied snakes were reported.

I. Disease

No disease outbreaks occurred during 1969. One case of a mummified fetus in a bison cow is discussed in the section on bison herd status, page 8. The one heifer bison calf of 1969 was vaccinated for Brucellosis on November 12. All butchered animals were blood tested for Brucellosis and all tests were negative.

III. Development and Maintenance

A. Physical Development

In addition to many hours spent on snow removal, routine vehicle maintenance, litter cleanup, and everyday maintenance, the following noteworthy developments were accomplished.

1. Headquarters Area

a. Office-shop Building. Office, shop, and bathroom interiors painted.
b. Quarters #1. Exterior and basement floor painted; bathroom retiled with ceramic tile and painted by Devils Lake Paint & Glass; rain gutters repaired and soldered.
c. Quarters #2. Combination windows installed upstairs; garage interior sheetrocked, exterior painted, and concrete apron poured.
d. Stairway built in machine shed to replace ladder.
e. Surplus overhead door from Des Lacs NWR installed in barn (completely unsatisfactory and should be replaced with fiberglass door.)
f. Old goose wintering pen torn down and rebuilt.
g. East shelter building mouse-proofed and Devils Lake Wetlands Office grass seed and warehouse material transferred for storage.
h. Large elm in office yard was braced in an attempt to save the tree from splitting.
i. Highway 57 right-of-way reposted.

2. Public Use Facilities

a. Recreation area toilets and shelters cleaned with fire pumper and men's toilets painted.
b. A number of large dead elms and other trees were removed from the recreation area.
c. Self-guided Nature Trail. Two thirds of a mile of trail was laid out, brushed, mowed, and some directional signs placed (will be extended to 1 mile and interpretive signs added in 1970).
d. Temporary chain gate installed at entrance to recreation area (permanent steel gate now being constructed.)
e. Leaflet dispenser rebuilt and placed along tour route.

3. Equipment

a. TD-6 roll bars built and mounted.
b. John Deere tractor roll bar built and mounted, seat belt installed.
c. Dodge stake dump seat belts installed.
d. Engine of #2 jeep overhauled.

B. Plantings

1. Aquatics and Marsh Plants. None

2. Trees and Shrubs. None

3. Upland Herbaceous Plants. None.

4. Cultivated Crops. Thirty acres of barley were planted in Unit II by permittee Howard Jabs. The yield was 40 bushels per acre. The refuge share is used for goose food and big-game cubes.

C. Collections and Receipts.

None

D. Control of Vegetation

1. Poison Ivy. Spot treatment using 2,4-D was carried out on plants in the recreation area frequented by visitors.

2. Field Bindweed. The 30-acre cropland in Unit II was treated by permittee Jabs using 2,4-D to reduce competition with barley.

A complete summary of herbicide use is found on NR-12.

E. Planned Burning

In order to reduce blue grass and encourage native species an attempt was made to burn the 160-acre grazing area in Unit II. Due to the over-grazing in 1968 and earlier years, sufficient material was not available to carry the burn and it failed. Only about 10 acres were burned. Grazing was curtailed in 1969 and there should be sufficient carry-over for a good burn in 1970.

F. Fires

December 5th a fire started by Indians burning brush at a local dump was neglected and spread into the marsh of Fort Totten Bay south of highway 57. Approximately 15 acres were burned of which five acres were preserve property. BIA and preserve personnel cooperated in contolling the fire. Only marsh vegetation was effected and there was no financial loss. If,

however,the fire had jumped the gravel road south of highway 57, it would have been quickly swept the length of the bay by the high winds to within a short distance of preserve headquarters.

IV. Resource Management

A. Grazing. None

B. Haying.

Due to the low spring precipitation hay production got off to a slow start and required a second cutting to get the necessary winter supply for the big-game. Unit II was hayed by permittees Howard Jabs, Bjarne Knutson, and Harold Belcher and produced 18 stacks. The hay meadow in Unit I was cut by Howard Jabs and produced 660 bales. The preserve's 1/3 share delivered to the corral totaled six stacks and 220 bales or 57 of the total 170 tons.

C. Fur Harvest. None

D. Timber Removal. None

E. Commercial Fishing. None

F. Surplus Animal Disposal.

All surplus animals are disposed of as butchered carcasses sold to local service clubs and organizations only. They are field-dressed by preserve personnel and delivered to the desired processor in Devils Lake or picked up at the preserve by the buyer. Prices this year were $320 for bison and $120 for elk. This was a price increase of 33% over 1968, but aroused only one indirect complaint from a buyer. Deer carcasses are donated to local institutions.

1. Bison.

11/5	1	2 yr.M	Grand Forks Co. Wildlife Fed.	484#	$320.00
	1	2 yr.M	S. D. State U. Wildlife Club	546#	320.00
11/7	1	2 yr,M	Minot Knights of Columbus	544#	320.00
11/12	½	11 yr.F	Buffalo L. Sportsman's Club	486#	160.00
	½		Wolford Wildlife Club		160.00
	½	? F	Bottineau Wildlife Fed.	578#	160.00
	½		Dakota Rifle & Pistol Club		160.00
11/17	1	10 yr.F	Fort Totten Days Inc.	540#	320.00
	6			(Ave. 530#)	1920 .00

11/9	1 hide	R. Thurman, Ft. Yates, N.D.	5.00
11/13	1 head	Dr. T. Zimmerman, Seattle, WA	20.00
	1 hide	" " " "	5.00
1/6	1 hide	R. Lybeck, Devils Lake, N.D.	5.00

Total $1955.00

2. Elk

11/5	1	1 yr.	M	Devils Lake Elks Club	246#	120.00
	1	1 yr.	M	Lehr Wildlife Club		120.00
11/7	½	1 yr.	M	Nelson Co. Wildlife Club	216	60.00
	½			Warwick Rod & Gun Club		60.00
11/11	1	1 yr.	M	Maddock Wildlife & Rifle Club	234	120.00
11/13	1	1 yr.	M	Fish Lake Wildlife Club		120.00
	1	1 yr.	M	Sheyenne Wildlife Club		120.00
	6				(Ave.232#)	720.00

11/9	2 hides	R. Thurman, Ft. Yates, N.D.	5.00

Total $725.00

3. Deer. During the fall eight deer, four bucks and four does, were butchered and donated to the Devils Lake School for the Deaf.

V. Field Investigation or Applied Research

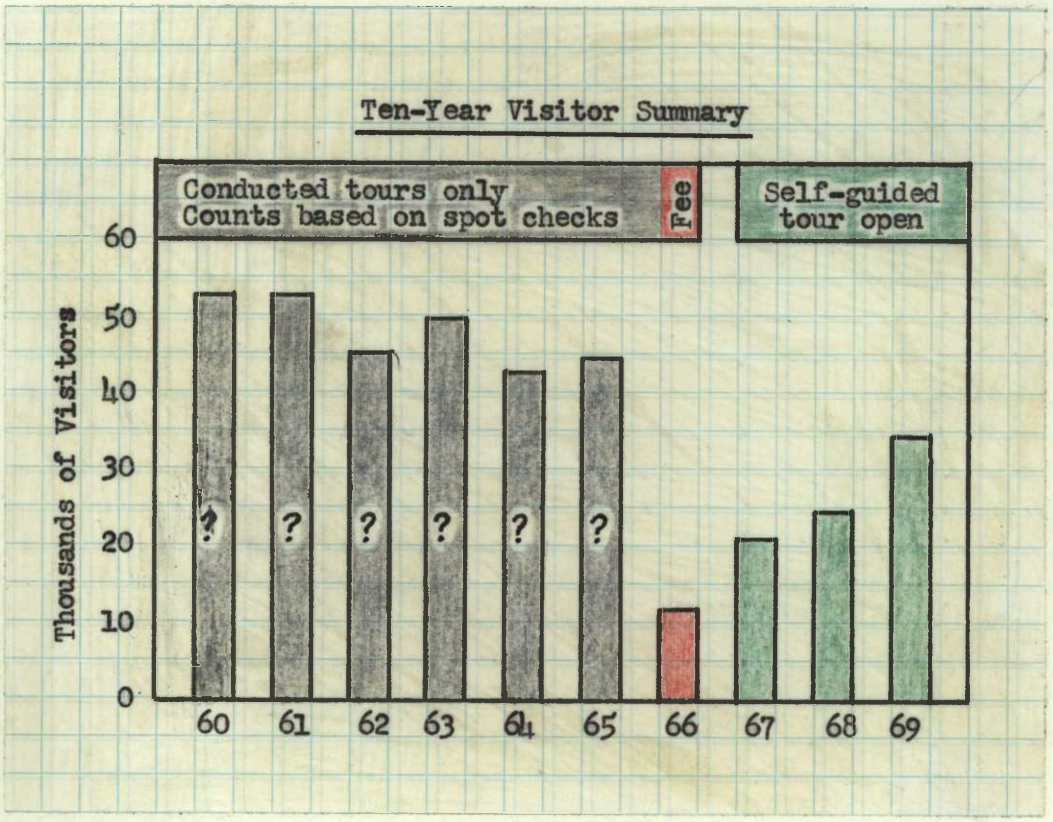
A. Progress Report. None

VI. Public Relations

A. Recreational Uses.

With the status of the American bison, elk, and white-tailed deer no longer in any doubt, Sully's Hill was almost closed during 1965. The resulting outcry of public opinion effected a reevaluation of Sully's Hill, and resulted in the preserve's continuation based largely on its public use. Management emphasis has now switched from chiefly preservation to emphasis on outdoor education and wildlife-oriented recreation. A definite measure of the success of this new management is the quantity of visitor use in close conjunction with the quality of the educational-recreational opportunities provided.

Total recreational visits for the preserve during 1969 were 34,760, an increase of 42% over 1968. The graph on the following page illustrates the recreational use load over the past ten years.



It is strongly felt that although the figures prior to 1966 may indicate use trends, they are unrealistically high. Prior to 1966 the prime recreational use of the preserve was picnicking and the limited physical facilities at that time could not possibly have served the numbers recorded. Also, the numbers were based on spot checks rather than automatic traffic counters.

During 1966 the prime use was still picnicking, but Sully's Hill was designated a fee area (1966 only) and much more accurate records were kept. Throughout these years tours of the big-game enclosure were limited to those conducted personally by preserve personnel and were thus necessarily low.

In 1967 a four-mile self-guided auto tour route through the enclosure was opened and quickly surpassed picnicking as the preserve's chief recreational attraction. Approximately 25,000 or two thirds of the visitors during 1969 toured the enclosure. A large number of these were people from the local area who drove out solely to see the animals and enjoy a leisurely drive.

It is felt that visitor use during 1969 was the highest we have ever had regardless of the earlier statistics. An automatic traffic counter in operation during part of 1968 and throughout the 1969 season has provided much more accurate visitor figures.

1969 Summary for Primary Visitor-Use Months

	April	May	June	July	Aug.	Sept.	Oct.
Visitors:	500	3000	5000	12,500	7,900	4,600	1,970
Peak :	50	800	725	3,200	1,350	650	180

Even now the figures are probably too high. For years the expansion factor for car counts at Sully's Hill has been based on an assumed factor of 4.5 visitors per car. While this may be an accurate figure, we plan to make several checks during 1970.

The visitor load is naturally concentrated on weekends and occasionally overcrowds the preserve. On Sunday, July 27, the last day of the annual three-day Fort Totten Days Indian celebration, 3,200 people crowded into Sully's Hill, sorely overtaxing the facilities. The high visitor use of the tour route on such crowded days understandably drives the animals to the more secluded areas of the enclosure. This in turn frustrates and disappoints many visitors who expect the animals to be out where they can be seen. Common sense (common to people of our backgrounds, but not necessarily common to the visitor) should tell the visitor not to expect the animals to be grazing along a busy road during midday. Nevertheless, failure to see bison or elk often sours a visit to the preserve.

Several projects are underway to alleviate this problem. One solution would be the acquisition of an 800-acre tract of open, rolling USDA grassland adjacent to Unit II and the transfer of bison to the area. This possibility is being explored, but even if it becomes fact, it will take time for development of facilities.

Our efforts in Unit I are primarily aimed at diversifying visitor use by providing more self-guided, interpreted facilities.

1. Nature Trail. During the summer of 1969 two thirds of a mile of self-guided nature trail was laid out, brushed, and mowed. During 1970 the trail will be lengthened to one mile and interpretive signs will be added.

2. Waterfowl Observation. During the fall additional geese and swans were added to the resident flock to increase the var-

iety and number. Development of observation areas along Sweetwater Lake and provision of interpretive facilities stressing waterfowl identification and ecology are planned for 1970.

3. Native Grass Identification. A native grass demonstration area is planned that will include interpretive materials covering grass identification and prairie ecology.

4. Preserve Literature.

a. Preserve Leaflet. A new leaflet was designed and a mock-up submitted to regional office during 1969.
b. Auto Tour Leaflet. The present tour leaflet will be redesigned to explain more about the animals when they are seen, and ease the pain when they are not seen by putting more emphasis on other aspects of the tour.
c. Bird List. A checklist will be provided (submitted to RO 1/70) and birdwatching encouraged.

In addition to these projects the two preserve signs along highway 57 and the painted-rock entrance sign are being replaced. Designed during 1969 and on order from the regional sign shop are two new highway signs, a large new entrance sign, and four new directional signs. The latter will be placed on BIA property in Fort Totten and should end the confusion experienced by visitors trying to find the preserve entrance.

B. Refuge Visitors

Frequent visitors included Vic Hall. Jim Heinecke, and Omer Swenson from the Devils Lake Wetlands Management Office; GMA Vic Blazevic from Devils Lake; add BIA and OEO personnel from Fort Totten.

Other Visitors:

Date	Name	Address	Purpose
4/22	Carl Stephan	R.O. Hydrolic Eng.	Check L. Alice
5/22	John Winship	RO. Pilot Biologist	Waterfowl census
6/19	Lyle Miller	RO, Safety Officer	Safety Insp.
6/27	Bill Brandvic	NDSU, State Entomol.	Tent Caterpillar Pr.
7/1	Richard Frye	NDSU, Entomol Dept.	Collect Tent Cater.
7/9	NDSU Entomologists	NDSU	Test Bacillus spray
7/16	John Winship	R. O. Pilot-Bio.	Brood survey
7/31	John CArlsen	RO, Asst. Reg. Sup.	Inspection
9/11-12	Dave Gilbert	Madison WO, S.D.	Manager orient.
10/7	Bud Hill	J. Clark Salyer NWR	Manager Orient.
10/8	Clair Rollings	RO,Staff Spec.	SYM inspection
10/10	Bill Brandvic	NDSU State Entomol.	Col. Tent Cater.

10/10	Richard Frye	NDSU, Entomol. Dept.	Coll. Tent Cat. egg masses
10/21-23	Barbara Holden	John Hopkins Univ.	Swan Mig. study
10/22-23	John Winship	RO, Pilot-Biologist	Waterfowl census
10/22-23	Dick Johnston	RO, Engineer	Waste treat. fac.
11/3	Jerry Wolsky	Arrowwood NWR	Return TD-6
11/12	Dr. R W Prior	Veterinarian, D.L.	Bison vac.
11/26	Rus Nylen	Warden NDGF, New Rkfd.	Crippled Swan
12/1	Bill Bair	BSF&W Area Bio, Towner	Wildlife Inv. plan
12/4	Bill Hesselbart	Arrowood NWR	Pickup Airboy motor
12/4	Dick Ackers	FHA, Jamestown	Rental resurvey

C. Refuge Participation

1/10 Gilbert attended N.D. Wildlife Conference at Bismarck.
1/16 Gilbert conducted tour of enclosure for 20 DLHS. girls.
1/22 Gilbert - 5 minute interview on KDLR radio, D.L.
4/2-3 Gilbert attended wetlands meeting at Watertown, S.D.
4/7-25 Gilbert attended Arden Hills supervisory training, Minn.
9/15 Goeke - biology class tour (26) St. James HS New Rockford
9/16 Goeke & Heinecke (Devils Lake WO) Warwick Garden Club tour.(15)

In addition Manager Gilbert was active in the Devils Lake Lions Club and the Civil Air Patrol. Biological Technician, Nelson is active in the International Order of Odd Fellows and the Sons of Norway, both in Devils Lake.

D. Hunting. None

E. Violations.

No violations were prosecuted by Sully's Hill personnel. On On several occasions late "picnickers" had to be ousted from the recreation area after dark. A gate installed at the entrance to the picnic area and locked at dark ended this problem.

One trespass violation on September 15, involving two Devils Lake youths who drove around a locked gate and up onto Sully's Hill, resulted in a warning and a sincere promise of parental discipline. (See photo section.)

One week later a speeding car driven by a local 15-year-old Indian boy smashed into a tree near Sweetwater Lake. (See photo section) No one was injured, no preserve property damaged (strong oak), and the driver was turned over to reservation police at Fort Totten (no action taken). An interesting, and ominous, footnote is that Indians are not required to have a driver's license of any kind to operate a vehicle within reser-

vation boundaries, which includes Sullys Hill, even on state roads. Most of the Indians do not have licenses and the accident rate on the reservation is high.

Animal tresspass on Unit II continues to be a problem. The fences are repeatedly cut each winter to allow Indian ponies to enter and forage.

F. Safety

1/20 Gilbert and Nelson attended defensive driving course conducted at the Devils Lake WO by Regional Safety Officer, Lyle Miller.

4/14 Nelson crushed the tip of his right ring finger while mounting the roll bars on the TD-6. (accident report 5/1/69) No time was lost.

6/19 Station safety inspection with Lyle Miller.

6/26 NYC Darrell DuBois cut his right foot with an ax while clearing storm damage. He received approximately 50 stitches at the Public Health Service Clinic at Fort Totten. X-rays showed he also had a slight chip on a bone of the big toe.

8/11 NYC's Yankton and Longie were treated at the Public Health Service Clinic for bee stings.

No regular safety meetings were conducted. With the constantly changing NYC personnel and BIA general assistance (welfare) men most safety items were better handled on a day-to-day basis. Hazards were discussed as each project was begun or new equipment operated.

A number of large dead trees were removed from the recreational area. Roll bars were installed on the TD-6 and John Deere tractors and seat belts were installed in the Dodge stake-dump truck. A stairway was built in the machine shed to replace the ladder previously used.

At the end of the year Sully's Hill has gone 1,842 days without a lost-time accident to Bureau employees. This does not include NYC or BIA general assistance workers since they are funded by OEO and the Department of Labor and are controlled by the BIA at Fort Totten.

VI. Other Items

A. Items of Interest

Sullys Hill has again survived the throes of a change of managers and is now involved in an administrative adoption by the Devils Lake Wetlands Management Office. Under the new arrangement the two offices will be based at Sullys Hill with the preserve serving as a sub-unit of the wetlands office under the wetlands manager.

Manager Gilbert transferred August 15 to the new Madison WMO, Madison, South Dakota, where he is the wetlands manager. Manager Goeke transferred to Sullys Hill September 8 from Sherburne NWR, Minnesota, where he was assistant manager.

In recognition of his performance and increased responsibilities Biological Technician Nelson was promoted from GS-5 to GS-6 on September 22. His value to a new manager cannot be overstated.

B. Credits

Goeke - Body of report, photographs, and report assembly.

Nelson - NR forms and provided answers to numerous questions about the year's activities.

Mary Pake, Devils Lake Wetlands Management Office - Typing.

The cover photograph shows the preserve's 9-year-old elk bull and part of his herd.

NORTH DAKOTA EASEMENT REFUGE DISTRICT #2

Lake Alice (Lac Aux Mortes)
Brumba Lake
Buffalo Lake
Johnson Lake
Lamb's Lake
Little Goose Lake
Pleasant Lake
Rock Lake
Sibley Lake
Silver Lake
Snyder Lake
Wood Lake

1969 Operations and Water Conditions

Management on the twelve easement refuges is limited to maintaining wetland habitat for waterfowl production and migrational use and control of hunting and trapping. Facilities are unchanged from 1968. With the exception of Lake Alice no water control was exercised on any of the refuges during the year. Unusually heavy runoff brought all eleven of the refuge lakes on the Mauvais Coulee to well over spillway level during the spring. Only Pleasant Lake, which is not on the Mauvais Coulee, did not reach spillway level. The coulee continued to flow throughout the summer and was still flowing under the ice at Lake Alice in December.

Lake Alice: Water right level, 1443.0 msl.; Operational level (summer), 1442.5.

With the control gates wide open the water level rose from a winter level of 1440.2 to a high of 1446.2 in late April and did not receed to the summer operating level of 1442.5 until the middle of August. Rushes piled against the structure by flood waters were removed primarily as a public relations effort and to facilitate any flow they may have been restricting.

The Elsperger dike on the northeast side of the Duck Road was broken by Joe Hoistad, a landowner east of Chain Lake, in an attempt to relieve flooding on his property. Water was still flowing into Lake Alice through the opened dike and road culvert in December. Another privately controlled dike was breached by flood waters approximately 100 yards south of the control structure. This, also, does not affect the Bureau's water right but will, unless repaired, result in flooded cropland when Lake Alice reaches flood level in the future. The ditch dug in 1967 through the east bank between Lake Alice and Chain Lake still has not been plugged. It did serve to empty a great deal of flood water from Chain Lake into Lake Alice during the spring and early summer.

After replacement of several damaged side seals, the control gates were closed on September 23 with the water level at 1441.0. The water rose slowly back to 1441.3 by the time the gates were opened on October 24 and then dropped to 1440.6 by freeze-up in mid-November. This level is almost one foot below the originally proposed winter level of 1441.5 and reflects pressure exerted by the local water board and in turn the State in anticipation of recurring flood conditions in the spring of 1970.

Based on USGS stream flow measurement near Cando, North Dakota, Lake Alice received a total inflow of 100,765 acre-feet of water and had an outflow of 90,027 acre-feet.

1969 Lake Alice Impoundment Data

Monthly Minimum

	Elev. (ft.msl.)	Area (acres)	Capacity (acre-ft.)
Nov. '68	1440.2	1640	1900
April '69	1445.5	Not avail.*	Not avail.*
May "	1445.0	" " "	" " "
June "	1443.8	" " "	" " "
July "	1442.8	3496	8564
Aug. "	1441.8	2776	5428
Sept. "	1441.0	2200	3380
Oct. "	1441.0	2200	3380
Nov. "	1440.6	1920	2640

Monthly Maximum

	Elev. (ft.msl.)	Area (acres)	Capacity (acre-ft.)
Nov. '68	1440.2	1640	1900
April '69	1446.2	Not avail.*	Not avail.*
May "	1446.1	" " "	" " "
June "	1445.0	" " "	" " "
July "	1443.8	" " "	" " "
Aug. "	1442.8	3496	8564
Sept. "	1441.8	2776	5428
Oct. "	1441.3	2416	4148
Nov. "	1440.6	1920	2640

* Requested from R.O. Engineering since our tables go only to 1443. elevation.

24

Physical Condition of Water Control Works

Refuge	Type Structure	Condition
Lake Alice	Radial gate	Excellent & functioning well
Brumba Lake	Concrete Stop-log	Good & functioning well
Buffalo Lake	Rubble-masonry spillway	Good & functioning but superseded by state controlled structure since 1968.
Johnson Lake	Clay plug	Good & still functioning well
Lambs Lake	Rubble-masonry spillway	Deteriorating but still functioning.
Little Goose Lake	Natural spillway	
Pleasant Lake	Rubble-masonry spillway	Repaired & seeded over, functioning well.
Rock Lake	Concrete stop log	No longer used.
Silver Lake	Rubble-masonry spillway	Partially removed & no longer functioning.
Sibley Lake	Natural spillway	
Snyder Lake	Rubble-masonry spillway	Deteriorating but still functioning.
Wood Lake	Rubble-masonry spillway	Good & still functioning.

1969 Water Depth on Easement Refuges

	Outlet Height	Sept. '68	April '69	Sept. '69
Brumba Lake	41"	42"	42"	18"
Buffalo Lake	Unknown	83"	123" (6/5)	110"
Johnson Lake	None	71"	83"	68"
Lambs Lake	None	45"	65"	54"
Little Goose Lake	116"	98"	116"	106"
Pleasant Lake	42"	22"	36" (6/5)	32"
Rock Lake	59"	52" (Oct.)	95"	40"
Sibley Lake	None	43"	73"	48"
Silver Lake	Unknown	30" (est.)	52"(est.)	36" (est.)
Snyder Lake	131"	111"	149"	110"
Wood Lake	76"	72"(est.)	76"	60"(10/6)

Physical Development

Replacement posting was conducted on all easement refuges prior to the opening of the waterfowl hunting season. Approximately 30 signs and 25 posts were replaced.

Lake Alice. A water depth guage was installed at the control structure, doing away with the tape measure method of checking water depth. Channels were cut in the control structure's catwalk support beams to allow full opening of the radial gates without damage to the side seals. Previously damaged seals were replaced on two gates.

Buffalo Lake. A concrete spillway was built by the state in front of the outlet culvert. This has raised the lake level approximately four feet above normal and created a good marsh at the north end of the lake. The Bureau's water right is not affected since higher lake levels have resulted.

Wildlife

Waterfowl. Waterfowl use of the refuges was generally down from previous years. This was probably a result of dispersal due to the abundant water in the area rather than a reflection of population numbers.

No attempt was made to estimate (guess) the waterfowl use figures for the easement refuges. Due to the limited manpower, the long distances involved, and operational needs at Sully's Hill, census information was very spotty and entirely inadequate to provide reliable use estimates.

The following observations are worthy of note:

4/12 10,000 blue and snow geese, 2,000 small Canadas, and 200 big Canadas at Lake Alice.

9/23 2,000 pelicans at Lake Alice.

10/20 40,000 blue and snow geese at Snyder Lake (large numbers present for 1½ weeks previous.)

10/23 Aerial census of easement area following large migration on 10/21 totaled 13,000 blue and snow geese, 4,000 Canadas and 2,300 whistling swans.

Breeding Pairs and Lone Males (Ducks)

	1965 (5/19)	1966 (5/17)	1967 (5/24)	1968 (5/21)	1969 (5/22)
Lake Alice	229	161	142	428	157
Brumba Lake	23	23	24	13	18
Buffalo Lake	36	38	17	55	40
Johnson Lake	55	49	52	54	41
Lamb's Lake	26	27	44	75	39
Little Goose Lake	9	6	10	11	5
Pleasant Lake	31	51	13	55	41
Rock Lake	102	151	124	147	69
Sibley Lake	67	57	44	93	63
Silver Lake	30	56	65	130	16
Snyder Lake	59	85	22	74	12
Wood Lake	9	4	1	8	7
	676	708	625	1172	508

Total Coots

Lake Alice	940	256	280	1150	40
Brumba Lake	12	23	9		
Buffalo Lake	30	10	5		
Johnson Lake	24	2	29		
Lamb's Lake	48	31	30	150	
Little Goose Lake	8	2	9	3	
Pleasant Lake	120	13	7	100	
Rock Lake	318	42	130		
Sibley Lake	90	14	4		25
Silver Lake	32	34	182	100	
Snyder Lake	2		1		10
Wood Lake	16	17	98	30	
	1640	444	784	1533	75

Aerial Brood Census

	1965	1966	1967	1968 (7/23)	1969 (7/16
Lake Alice	58	73	90	175	89
Brumba Lake	3	3	3	5	7
Buffalo Lake	7	18	14	21	18
Johnson Lake	4	18	12	15	13
Lamb's Lake	4	22	7	19	18
Little Goose Lake		3			2
Pleasant Lake	8	3	7	22	9
Rock Lake	13	21	23	53	31
Sibley Lake	5	46	16	24	19
Silver Lake	7	9	14	29	6
Snyder Lake	5	18	10	8	9
Wood Lake	2	1	1	4	1
	116	235	197	375	222

Hunting

Goose hunting was relatively poor around the easement refuges as compared with other years. With more water available during the fall the geese were more scattered. Many birds came through further west and stopped at Hurricane Lake. There was practically no goose hunting at Silver Lake and success was poor at Lake Alice. The traditional firing line along the Duck Road at Lake Alice was completely absent. The only heavy pressure and good success was in the Rock, Brumba, and Snyder Lakes area. The firing lines along the north and east sides of Snyder lake on October 20 were a wonder of poor sportsmanship. Even with officers in full view "sportsmen" did not hesitate to shoot at birds heading into the refuge.

Trapping

Interest was high with 28 trappers receiving permits to trap easement refuges. Their total harvest as of December 31 was 1773 animals. Three boys trapping on Lake Alice without permits were apprehended by GMA Blazevic and manager Goeke. They were mistakenly trapping with permission of landowner John Elsperger, using his permit. The boys were issued permits, Mr. Elsperger's hands were spanked, and the season continued without incident. Not one, but two albino muskrats were trapped by Mario Hoyt at Johnson Lake. It is not known if they were both caught at the same location.

Summary of 1969 Trapping

	Trappers	Musk.	Mink	Weasel	Beaver	Skunk	Red Fox	Badger	Raccoon
Lake Alice	13	817	1			1	3		6
Buffalo L.	1		3	1		6	2		2
Johnson L.	8	194*	6	2			2	1	
Lamb's L.	1	26	2	2				1	
Rock L.	3	120	6	1	3		1	1	
Sibley L.	1	500	3	1		2	1		
Wood L.	11	46	9				1		
	28	1703	30	7	3	9	10	3	8

* 2 Albino muskrats trapped by Mario Hoyt of Pekin, N.D.

Burning

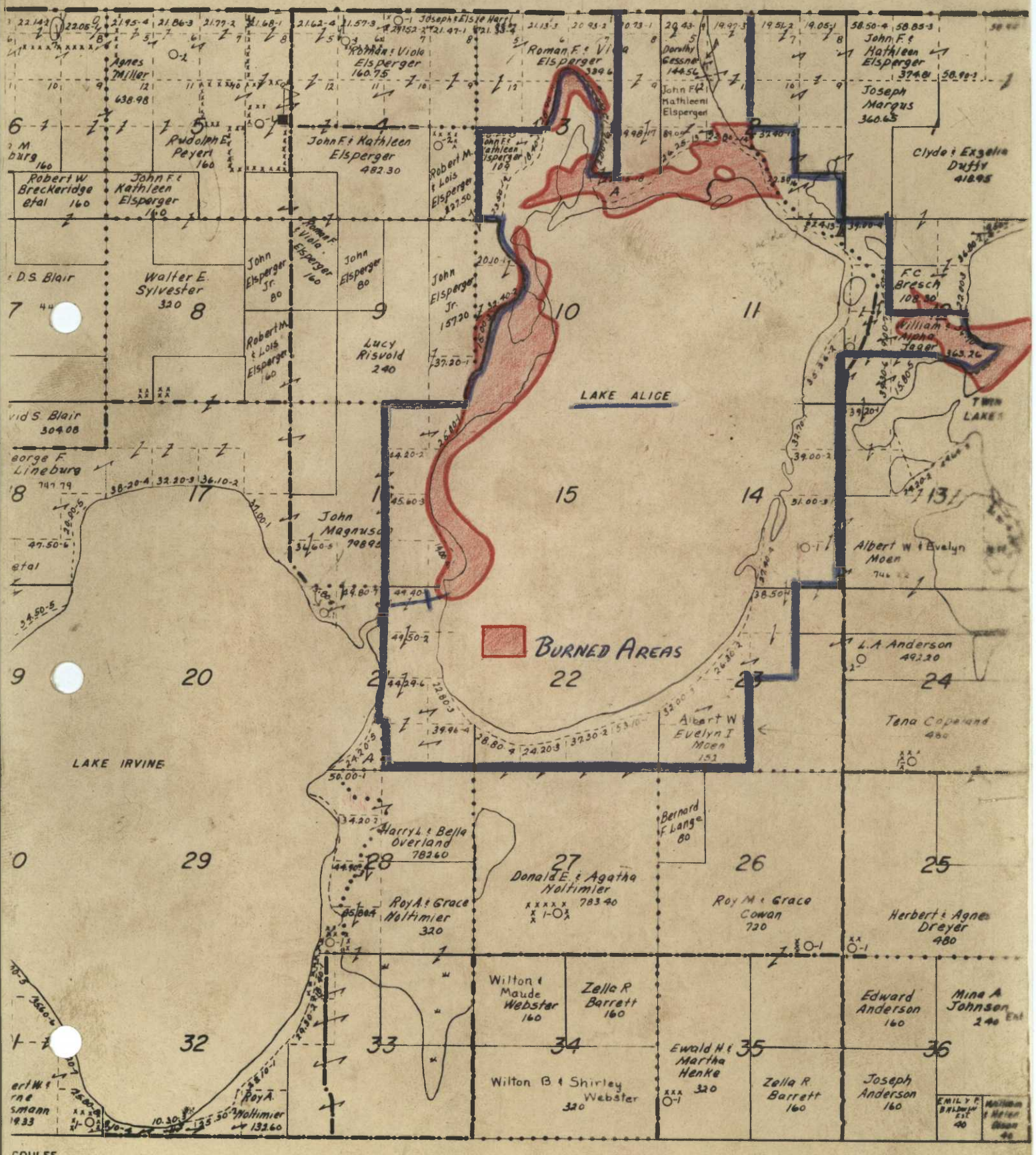
With the open fall heavy haze from the smoke of burning potholes was a common afternoon occurrance. During the period November 28 to December 1 several hundred acres of marsh vegetation were burned at Lake Alice. Since the easements only concern the control of hunting and certain water rights, we have no control over this practice. Our only hope for saving this valuable winter cover is in our public relations program and early snow. The extent of burning on the other easement refuges is unknown.

CHAIN LAKES

TOWNSHIP 156 N. RANGE 66 W.

CODE LETTER Y

TOWNER CO.



COULEE TWP

Submitted by:

David E. Goeke
Refuge Manager
March 16, 1970

Approved by:

Omer N. Swenson
Devils Lake Wetlands Management Office

Approved, Regional Office:

Date: 3-23-70

Regional Refuge Supervisor [redacted]

3-1750
Form NB
(Rev. March 1953)

WATERFOWL

REFUGE ~~Gullye Hill Preserve~~ MONTHS OF ~~Jan~~ TO ~~Apr~~, 19___

(1) Species	(2) Weeks of reporting period									
	1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada				NOTHING TO REPORT						
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard										
Black										
Gadwall										
Baldpate										
Pintail										
Green-winged teal										
Blue-winged teal										
Cinnamon teal										
Shoveler										
Wood										
Redhead										
Ring-necked										
Canvasback										
Scaup										
Goldeneye										
Bufflehead										
Ruddy										
Other										
Coot:										

Int. Dup. Sec.,
Wash., D. C. 37944

3-1750a
Cont NR-1
(Rev March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE Sallys Hill Preserve MONTHS OF Jan TO Apr, 1969

(1) Species	(2) Weeks of reporting period 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production Broods: Estimated seen	total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada											
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard					4	32	12	18	322		
Black											
Gadwall											
Baldpate								26	182		
Pintail											
Green-winged teal							10		70		
Blue-winged teal								20	140		
Cinnamon teal											
Shoveler							4	2	42		
Wood								2	14		
Redhead											
Ring-necked											
Canvasback						4	2		42		
Scaup							20	200	1540		
Goldeneye											
Bufflehead											
Ruddy											
Other A. Merganser						10			70		
Coots:								20	140		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese			
Ducks	2422	268	
Coots	140	30	

SUMMARY

Principal feeding areas Fort Totten Bay

Principal nesting areas

Reported by Irvin A. Nelson

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C.
1953

3-1750
Form [illegible]-1
(Rev. [illegible]rch 1953)

WATERFOWL

REFUGE Sullys Hill NGP

MONTHS OF May TO August, 19 69

(1) Species	Weeks of (2) reporting period 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:		NONE TO REPORT								
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	7	12	10	9	6	5	2	2	4	8
Black										
Gadwall						2				3
Baldpate	15	2	2	1	3		2			2
Pintail						3				
Green-winged teal										
Blue-winged teal	9	4	6	2	6	4	6	6	10	6
Cinnamon teal										
Shoveler							1	3	2	
Wood				1		1		1		
Redhead										
Ring-necked										10
Canvasback								2	3	
Scaup	100		80							
Goldeneye										
Bufflehead										
Ruddy		30	20		2				1	1
Other										
Coots:	0	0	0	0	0	2	3	3	0	5
~~Odd~~:										

Int. Dup. Sec., Wash., D.C. 37944

3-1750a
Cont NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE **Sullys Hill NGP** MONTHS OF **May** TO **August**, 19**69**

(1) Species	(2) Weeks of reporting period: 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production: Broods seen	Broods: Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:					NONE TO REPORT						
Canada											
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	13	15	19	12	183	59	102	160	4,396	5	36
Black											
Gadwall		10		3	80	21	73	134	2,282	1	2
Baldpate		14			75	9	100	140	2,555		
Pintail		9	1		100	32	152	140	3,059		
Green-winged teal											
Blue-winged teal	1	12	1	12	140	84	165	219	4,851	2	23
Cinnamon teal											
Shoveler		4	2	3	45	15	18	35	896		
Wood									21		
Redhead	2	3			30	11	22	35	721		
Ring-necked											
Canvasback	2	5			50	8	30	53	1,141		
Scaup									1,260		
Goldeneye											
Bufflehead											
Ruddy		12	4		10		65	80	1,575	3	15
Other (White-winged Scoter)							1		7		
Coots:	5	3	3	2	29	220	330	750	9,485		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans			
Geese	(Captive)	29	8
Ducks	22,764	996	76
Coots	9,485	750	

SUMMARY

Principal feeding areas **Ft. Totten bay (Devils Lake)**

Principal nesting areas **Lake shore meadow**

Reported by **Bob Brown**

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C.
1953

3-1750
Form N[illegible]-1
(Rev. [illegible]rch 1953)

WATERFOWL

REFUGE Sullys Hill NGP MONTHS OF September TO December, 1969

(1) Species	(2) Weeks of reporting period 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	160	140	120	200	315	200	300	300	350	500
Black									1	
Gadwall	125	60	80	120	150	80	50	150	30	
Baldpate	130	80	120	200	150	200	150	60		
Pintail	120	40	20	30	20	20	20			
Green-winged teal	210	210	110	90	120	70				
Blue-winged teal										
Cinnamon teal										
Shoveler	10	20	60	210	400	30	80	150	1,000	1,000
Wood										
Redhead	15	20	60	20	20	60	50			60
Ring-necked										
Canvasback	30	20	40	10	20	20	40			
Scaup	25	50	100	60	200	300	420	530	1,225	430
Goldeneye										
Bufflehead								20	300	100
Ruddy	140	100	200	350	300	200	200	400	800	200
Other										
Coot:	500	200	150	120		60	20	20	20	20

Int. Dup. Sec., Wash., D.C. 37944

3-1750a
Cont NR-1
(Rev March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE **Sullys Hill NGP** MONTHS OF **September** TO **December**, 19 **69**

(1) Species	(2) Weeks of reporting period 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production Broods seen	Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada											
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	400	20							21,000		
Black									7		
Gadwall									5,922		
Baldpate									7,616		
Pintail									1,911		
Green-winged teal											
Blue-winged teal									5,670		
Cinnamon teal											
Shoveler	600								24,948		
Wood											
Redhead	10								2,205		
Ring-necked											
Canvasback									1,274		
Scaup	70								23,870		
Goldeneye											
Bufflehead									2,940		
Ruddy	40								20,482		
Other											
Coots:									7,616		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	None	-	-
Geese	None	-	-
Ducks	117,845	3,706	
Coots	7,616	500	

SUMMARY

Principal feeding areas **Fort Totten Bay and Sweetwater Lake**

Principal nesting areas

Reported by **Irvin A. Nelson**

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C.
1953

3-1751
Form No. 1A
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Sully's Hill Preserve Months of Jan to Apr 1969

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
D-c cormorant	12	4-30	12	4-30						15
B. kingfisher	1	4-12	2	4-25						4
Killdeer	6	4-12	8	4-20						10
II. Shorebirds, Gulls and Terns:										
R-b gull	1	4-6	30	4-18						40
Frank. gull	20	4-25	20	4-25						30

(over)

(1)	(2)		(3)		(4)	(5)		(6)
III. Doves and Pigeons:								
Mourning dove	2	4-15	8	4-25				20
White-winged dove								
IV. Predaceous Birds:								
Golden eagle								
Duck hawk								
Horned owl								
Magpie	6 Winter Resident							30
Raven								
Crow	6	3-19	80	4-7				100
Bald eagle	1	3-21	1	3-21				1
Red-t. hawk	1	4-7	2	4-18				4

Reported by Irvin A. Nelson

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

3-1751
Form NA-1A
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Sullys Hill NGP Months of May to August 1969

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Double-crested cormorant	6	5/2	15	8/8	Still Present					
Black-crowned night heron	2	5/9	6	7/11	"	"				
Great blue heron	1	5/5	5	8/15	"	"				
Belted kingfisher	2	5/9			"	"				
White pelican	3	6/23	25	7/6	25	7/6				
American egret	1	5/5			1	5/5				
Western grebe	2	5/5	257	8/22	Still Present					
Eared grebe	2	7/25	50	8/26	"	"				
Pied-billed grebe	1	7/25	18	8/14	"	"				
II. Shorebirds, Gulls and Terns:										
Ring-bill gulls	12	5/2	20	7/17	Still Present					
Franklin's gull	15	5/2	1200	8/8	"	"				
Black tern	2	5/5	130	7/17	"	"				
Common tern	1	5/5	35	7/17	"	"				
Killdeer	2	7/4	2	8/26	"	"				
Lesser yellowlegs	10	7/4	100	8/14	"	"				
Spotted sandpiper	1	7/11	1	8/26	"	"				
Sora rail	1	7/11	1	7/11	1	7/11				
Avocet	1	5/5	1	5/5	1	5/5				
Hudsonian godwit	1	7/25	1	7/25	1	7/25				
Northern phalarope	300	7/25	300	7/25	85	8/14				
Wilson's phalarope	2	6/26	450	8/22	Still Present					

(over)

(1)	(2)		(3)		(4)		(5)	(6)
III. Doves and Pigeons:								
Mourning dove	2	5/6	Common		Still	Present		
White-winged dove								
IV. Predaceous Birds:								
Golden eagle						"		
Duck hawk						"		
Horned owl						"		
Magpie	1	6/13	1	6/13	1	7/25		
Raven	1	6/23	Seen along Highway #57			"		
Crow	5	6/3	Common					

Reported by Bob Brown

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

59317

3-1751
Form NWRA
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Sullys Hill NGP Months of September to December 1969

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Double-crested Cormorant	12	4-30	12	4-30	12	10-10				12
Black-crowned night Heron	2	5-9	6	7-11	4	8-26				8
Great Blue Heron	1	5-5	6	9-5	1	10-24				8
Belted Kingfisher	1	4-12	2	4-25	2	9-26				4
White Pelican	3	6-23	25	7-6	25	7-6				25
American Egret	1	5-5	1	5-5	1	5-5				1
Western Grebe	2	5-5	257	8-22	30	10-3				260
Eared Grebe	2	7-25	50	8-26	8	9-20				50
Pied-billed Grebe	1	7-25	18	8-14	12	9-26				
II. Shorebirds, Gulls and Terns:										
Ring-bill Gulls	1	4-6	200	9-20	20	11-7				2,000
Franklin Gulls	20	4-25	40	9-26	20	10-24				1,500
Black Tern	2	5-5	130	7-17	30	8-26				200
Common Tern	1	5-5	35	7-17	10	9-20				50
Killdeer	6	4-12	8	4-20	6	9-20				12
Lesser Yellow Legs	10	7-4	100	8-14	3	10-10				150
Spotted Sandpiper	1	7-11	1	8-26	1	8-26				1
Avocet	1	5-5	12	7-17	12	7-17				12
Northern Phalarope	300	7-25	300	7-25	300	7-25				300
Wilsons Phalarope	2	6-26	450	8-22	450	8-22				450

(over)

(1)	(2)		(3)		(4)		(5)		(6)
III. Doves and Pigeons:									
Mourning dove	2	4-15	8	4-25	6	10-24			20
White-winged dove									
IV. Predaceous Birds:									
Golden eagle									
Duck hawk									
Horned owl	2	Year around resident							2
Magpie	20	Year around resident							20
Raven	1	6-23	1	6-23	1	6-23			1
Crow	6	3-19	500	10-8	1	12-2			500
Bald Eagle	1	3-21	2	11-1	2	11-1			2
Red-T Hawk	1	4-7	4	4-25	1	10-24			4
Marsh Hawk	1	4-20	2	5-5	1	10-10			2
Sparrow Hawk	1	6-6	2	7-25	2	7-25			2

Reported by.....

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

59317

3-1750b
Form NR-1B
(Rev. Nov. 1957)

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

Refuge ~~Sulphur Mill~~ For 12-month period ending August 31, 19~~69~~

Reported by ~~David E. Cooke~~ Title ~~Refuge Manager~~

(1) Area or Unit Designation	(2) Habitat Type	(2) Habitat Acreage	(3) Use-days	(4) Breeding Population	(5) Production
	Crops	~~30~~	Ducks ~~60,122~~	~~50~~	~~76~~
	Upland	~~1470~~	Geese ~~2,000~~	~~(captive-25)~~	~~0~~
	Marsh	~~15~~	Swans ~~3,700~~	-	-
	Water	~~160~~	Coots ~~10,340~~	-	-
	Total	~~1675~~	Total ~~96,162~~	~~75~~	~~81~~
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		-
	Total		Total		
	Crops		Ducks		
	Upland		Geese		
	Marsh		Swans		
	Water		Coots		
	Total		Total		

(over)

INSTRUCTIONS

All tabulated information should be based on the best available techniques for obtaining these data. Estimates having no foundation in fact must be omitted. Refuge grand totals for all categories should be provided in the spaces below the last unit tabulation. Additional forms should be used if the number of units reported upon exceeds the capacity of one page. This report embraces the preceding 12-month period, NOT the fiscal or calendar year, and is submitted annually with the May-August Narrative Report.

(1) Area or Unit: A geographical unit which, because of size, terrain characteristics, habitat type and current or anticipated management practices, may be considered an entity apart from other areas in the refuge census pattern. The combined estimated acreages of all units should be equal the total refuge area. A detailed map and accompanying verbal description of the habitat types of each unit should be forwarded with the initial report for each refuge, and thereafter need only be submitted to report changes in unit boundaries or their descriptions.

(2) Habitat: Crops include all cultivated croplands such as cereals and green forage, planted food patches and agricultural row crops; upland is all uncultivated terrain lying above the plant communities requiring seasonal submergence or a completely saturated soil condition a part of each year, and includes lands whose temporary flooding facilitates use of non-aquatic type foods; marsh extends from the upland community to, but not including, the water type and consists of the relatively stable marginal or shallow-growing emergent vegetation type, including wet meadow and deep marsh; and in the water category are all other water areas inundated most or all of the growing season and extending from the deeper edge of the marsh zone to strictly open-water, embracing such habitat as shallow playa lakes, deep lakes and reservoirs, true shrub and tree swamps, open flowing water and maritime bays, sounds and estuaries. Acreage estimates for all four types should be computed and kept as accurate as possible through reference to available maps supplemented by periodic field observations. The sum of these estimates should equal the area of the entire unit.

(3) Use-days: Use-days is computed by multiplying weekly waterfowl population figures by seven, and should agree with information reported on Form NR-1.

(4) Breeding Population: An estimate of the total breeding population of each category of birds for each area or unit.

(5) Production: Estimated total number of young raised to flight age.

Interior Duplicating Section, Washington, D. C. 27580

3-1752
Form [illegible]-2
(April 1946)

UPLAND GAME BIRDS

1613

Refuge Sallyn Hill Preserve Months of Jan. to Apr., 194 69

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
R-n pheasant	Total acres 1,670. 700 acres of wood and timbered pasture. Remainder is open pasture and hayland.								Unknown	None seen
3-4 grouse	*	279							6	
Grey partridge	*	139.5							12	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1752
Form [illegible]-2
(April 1946)

UPLAND GAME BIRDS

1613

Refuge Gallys Mill NGP Months of May to Aug, 1949

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
R-n pheasant	Total acres 1,674 700 acres of marsh and timbered pasture. Remainder is open pasture and hayland.								Unknown	None seen
S-tail grouse	*								6	None seen
Grey Partridge	*								6	None seen

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1752
Form [illegible]-2
(April 1946)

UPLAND GAME BIRDS

1613

Refuge **Sullys Hill N.G.P.** Months of **September** to **December**, 19**69**

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
R-N Pheasant	**Total acres 1,674, 700 acres of marsh and timbered pasture. Remainder is open pasture and hayland.**	**837**			**1 hen 1 cock**				**2**	
S-T Grouse	**"**	**209**							**8**	
Gray Partridge	**"**	**139.5**							**12**	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-17[illegible]
Form NR-3
(June 1945)

BIG GAME

Refuge **Sullys Hill** Calendar Year **1969**

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re-stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
American Bison	**700 A. enclosure. Timber on large rolling hills. Approx. 250 A. grass.**	**6**			**6**							**37**	**31**	
Elk	**"**	**7**			**6**							**29**	**23**	
W-T Deer	**"**	**9**			**8***				**3**			**30**	**22**	

Remarks: ***Donated to North Dakota Deaf School, Devils Lake, N. D.**

Reported by **Irvin A. Nelson**

INSTRUCTIONS

Form NR-3 - BIG GAME

(1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.

(2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge: once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated total number of young produced on refuge.

(4) REMOVALS: Indicate total number in each category removed during the year.

(5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.

(6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of <u>each species</u> on the refuge at period of its greatest abundance and also as of Dec. 31.

(8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

3-870
(Revised 2-5-52)

REPORT ON BIG-GAME ANIMALS

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

Refuge: **Sullys Hill** Date: **January 1, 1970**

The following is a report on the changes which have occurred in the number of animals during the period from **January 1**, 19**69** to **January 1**, 19**70**:

Losses and gains	Buffalo	Elk	Deer	Longhorns	Antelope	Sheep
TOTAL **Jan. 1**, 19**69**	**31**	**22**	**25**			
LOSSES - Dead:						
Natural causes						
Accidents			**3**			
Sales	**6**	**6**				
Donated			**8**			
LOSSES - Live:						
Gifts						
Sales						
GAINS:						
Births	**6**	**7**	**9**			
Gifts						
TOTAL **Jan. 1**, 19**70**	**31**	**23**	**22**			

REMARKS:

Signature: _____
Title:

Interior - Duplicating Section, Washington, D. C.

3-1754
Form [illegible]-4
(June 1945)

SMALL MAMMALS

Refuge Sully's Hill Preserve Year ending April 30, 1969

(1) Species	(2) Density		(3) Removals					(4) Disposition of Furs						(5) Total Population
								Share Trapping						
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator * Control	For Re-stocking	For Research	Permit Number	Trappers Share	Refuge share	Total Refuge Furs Shipped	Furs Donated	Furs Destroyed	
Woodchuck	167h acres													12
Raccoon	timber & grasslands													20
Mink	"													4
Pocket gopher	"													30
Cottontail	"													25
Striped skunk	"													4
Red fox	"													6
Gray squirrel	"													30
Fox squirrel	"													50

* List removals by Predator Animal Hunter

REMARKS:

Reported by Irvin A. Nelson

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i. e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

(1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan.)

(2) DENSITY: Applies particularly to those species considered in removal programs. Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year, including any taken on the refuge by Service Predatory Animal Hunter. Also show any removals not falling under headingslisted.

(4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market, including furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.

(5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.

REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

3-1758
Form 1 8
(Rev. Jan. 1956)

ish and Wildlife Service Branc of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge **Sullys Hill Preserve** County **Benson** State **North Dakota**

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return				Total Acreage Planted	Green Manure, Cover and Waterfowl Browsing Crops Type and Kind	Total Acreage
			Harvested		Unharvested				
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
Barley	**20**	**800 bu.**	**10**	**400 bu.**			**30**		**30**
								Fallow Ag. Land.	**None**

No. of Permittees: Agricultural Operations **1** Haying Operations **3** Grazing Operations **None**

Refuge Share

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
Alfalfa	**70**	**90**	**8 ton**	1. Cattle				
Alf-brome	**30**	**80**	**16 "**					
Alf-Native	**20**	**40**	**8 "**	2. Other				
Native	**10**	**40**	**8 "**					
Brome	**40**	**43**	**8 "**					
				1. Total Refuge Acreage Under Cultivation				**30**
Hay - Wild				2. Acreage Cultivated as Service Operation				

DIRECTIONS FOR PREPARING FORM NR--8'
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only thenumber of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvesed column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

3-1570
NR-88
(4/54)

REFUGE GRAIN REPORT

Refuge Sullys Hill Preserve Months of January through December, 1969

(1) Variety*	(2) On Hand Beginning of Period	(3) Received During Period	(4) Total	(5) Grain Disposed of				(6) On Hand End of Period	(7) Proposed or Suitable Use*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Barley	250	400	650	-	-	350	350	300		300	None
Corn	60	-	60	-	-	30	30	30		30	None

(8) Indicate shipping or collection points

(9) Grain is stored at Preserve Hqs.

(10) Remarks

*See instructions on back.

NR-8a

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

(1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR–9.

(3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.

(4) A total of columns 2 and 3.

(6) Column 4 less column 5.

(7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.

(8) Nearest railroad station for shipping and receiving.

(9) Where stored on refuge: "Headquarters granary," etc.

(10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

INT.-DEP. SEC., WASH., D.C. 17065

3-1979 (NR-12)
(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PESTICIDE APPLICATION

Refuge: **Sullys Hill NGP**

Proposal Number: **1, 4, 5**

Reporting Year: **1969**

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. June	Poison Ivy & Nettle	Sullys Hill recreation area	spot	Agsco Brush Killer 2 lb. 2,4-D Isoctyl ester/gal. 2 lb. 2,4,5-T Isoctyl ester/gal.	1 quart	2 lbs/acre	½ pt./3 gal. water spot treat	hand sprayer
4. Mid-June	Field Bindweed	Sullys Hill Unit II cropland	30	2,4-D Dimethylamine Salt 4 lb. a.i./gal.	8 gal.	1 lb/acre	5 gal/acre	ground sprayer
5. Late June	Leafy Spurge	Pleasant Lake WPA (Carl Anderson Tract)	95	2,4-D Isoctyl ester 6 lb. a.i./gal.	32 gal.	2 lb/acre	5 gal/acre	ground sprayer

10. Summary of results (continue on reverse side, if necessary)

1. Good results.

4. Good results.

5. Stopped seed production, but did not affect plant.

35500

Refuge Manager, Dave Goeke, transferred to Sullys Hill in September from Sherburne, NWR.

Biological Technician, Irvin Nelson, tending his flocks. This gets to be a pretty chilly job, especially on days when the temperature never climbs above 15 or 20 <u>below</u> zero.

FEB • 70 •

Two Devils Lake youths drove around a locked gate, up onto Sullys Hill, and then down the north slope into the trees. They thought they were following a trail. Note the "trail" in the foreground of the photograph.

FEB • 70 •

This car was driven by a local 15-year-old Indian boy (no license and none required of Indians on reservation) who was taking out his frustrations behind the wheel. As he came speeding around the lake (15 mph limit) he lost control, hit an oak tree, and spun around. No one was hurt, but if the tree hadn't been there he would have gone into the lake.

Our 5-year-old bull hogging more than his share of grain-molasses cubes. These cubes save us a great deal of time and effort during the fall disposal. The animals are attracted by the cubes and we can pick our animals as they eat - not a very pleasant job with a herd this small.

THE END

(from our 6-year-old bull)

3-1750
Form NR-1
(Rev. March 1953)

WATERFOWL

REFUGE Sullys Hill NGP

MONTHS OF September TO December, 1969

(1) Species	(2) Weeks of reporting period 1	2	3	4	5	6	7	8	9	10
Swans:										
Whistling										
Trumpeter										
Geese:										
Canada										
Cackling										
Brant										
White-fronted										
Snow										
Blue										
Other										
Ducks:										
Mallard	160	140	120	200	315	200	300	300	350	500
Black									1	
Gadwall	125	60	80	120	150	80	50	150	30	
Baldpate	130	80	120	200	150	200	150	60		
Pintail	120	40	20	30	20	20	20			
Green-winged teal	210	210	110	90	120	70				
Blue-winged teal										
Cinnamon teal										
Shoveler	10	20	60	210	400	30	80	150	1,000	1,000
Wood										
Redhead	15	20	60	20	20	60	50			60
Ring-necked										
Canvasback	30	20	40	10	20	20	40			
Scaup	25	50	100	60	200	300	420	530	1,225	430
Goldeneye								[illegible]	[illegible]	100
Bufflehead								20	300	100
Ruddy	140	100	200	350	300	200	200	400	800	200
Other										
Coot:	500	200	150	120		60	20	20	20	20

Int. Dup. Sec., Wash., D.C. 37944

3-1750a
Cont. NR-1
(Rev. March 1953)

WATERFOWL
(Continuation Sheet)

REFUGE **Sullys Hill NGP** MONTHS OF **September** TO **December**, 19 **69**

(1) Species	(2) Weeks of reporting period 11	12	13	14	15	16	17	18	(3) Estimated waterfowl days use	(4) Production Broods seen	(4) Production Estimated total
Swans:											
Whistling											
Trumpeter											
Geese:											
Canada											
Cackling											
Brant											
White-fronted											
Snow											
Blue											
Other											
Ducks:											
Mallard	400	20							21,000		
Black									7		
Gadwall									5,922		
Baldpate									7,616		
Pintail									1,911		
Green-winged teal											
Blue-winged teal									5,670		
Cinnamon teal											
Shoveler	600								24,948		
Wood											
Redhead	10								2,205		
Ring-necked											
Canvasback									1,274		
Scaup	70								23,870		
Goldeneye											
Bufflehead									2,940		
Ruddy	40								20,482		
Other											
Coots:									7,616		

(over)

	(5) Total Days Use	(6) Peak Number	(7) Total Production
Swans	None	-	-
Geese	None	-	-
Ducks	117,845	3,706	
Coots	7,616	500	

SUMMARY

Principal feeding areas Fort Totten Bay and Sweetwater Lake

Principal nesting areas

Reported by Irvin A. Nelson

INSTRUCTIONS (See Secs. 7531 through 7534, Wildlife Refuges Field Manual)

(1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and national significance.

(2) Weeks of Reporting Period: Estimated average refuge populations.

(3) Estimated Waterfowl Days Use: Average weekly populations x number of days present for each species.

(4) Production: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.

(5) Total Days Use: A summary of data recorded under (3).

(6) Peak Number: Maximum number of waterfowl present on refuge during any census of reporting period.

(7) Total Production: A summary of data recorded under (4).

Interior Duplicating Section, Washington, D. C.
1953

3-1751
Form NR-1A
(Nov. 1945)

MIGRATORY BIRDS
(other than waterfowl)

Refuge Sullys Hill NGP Months of September to December 1969

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. Water and Marsh Birds:										
Double-crested Cormorant	12	4-30	12	4-30	12	10-10				12
Black-crowned night Heron	2	5-9	6	7-11	4	8-26				8
Great Blue Heron	1	5-5	6	9-5	1	10-24				8
Belted Kingfisher	1	4-12	2	4-25	2	9-26				4
White Pelican	3	6-23	25	7-6	25	7-6				25
American Egret	1	5-5	1	5-5	1	5-5				1
Western Grebe	2	5-5	257	8-22	30	10-3				260
Eared Grebe	2	7-25	50	8-26	8	9-20				50
Pied-billed Grebe	1	7-25	18	8-14	12	9-26				
II. Shorebirds, Gulls and Terns:										
Ring-bill Gulls	1	4-6	200	9-20	20	11-7				2,000
Franklin Gulls	20	4-25	40	9-26	20	10-24				1,500
Black Tern	2	5-5	130	7-17	30	8-26				200
Common Tern	1	5-5	35	7-17	10	9-20				50
Killdeer	6	4-12	8	4-20	6	9-20				12
Lesser Yellow Legs	10	7-4	100	8-14	3	10-10				150
Spotted Sandpiper	1	7-11	1	8-26	1	8-26				1
Avocet	1	5-5	12	7-17	12	7-17				12
Northern Phalarope	300	7-25	300	7-25	300	7-25				300
Wilsons Phalarope	2	6-26	450	8-22	450	8-22				450

(over)

(1)	(2)		(3)		(4)		(5)			(6)
III. Doves and Pigeons:										
Mourning dove	2	4-15	8	4-25	6	10-24				20
White-winged dove										
IV. Predaceous Birds:										
Golden eagle										
Duck hawk										
Horned owl	2	Year around resident								2
Magpie	20	Year around resident								20
Raven	1	6-23	1	6-23	1	6-23				1
Crow	6	3-19	500	10-8	1	12-2				500
Bald Eagle	1	3-21	2	11-1	2	11-1				2
Red-T Hawk	1	4-7	4	4-25	1	10-24				4
Marsh Hawk	1	4-20	2	5-5	1	10-10				2
Sparrow Hawk	1	6-6	2	7-25	2	7-25				2

Reported by.....

INSTRUCTIONS

(1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiiformes)
II. Shorebirds, Gulls and Terns (Charadriiformes)
III. Doves and Pigeons (Columbiformes)
IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)

(2) First Seen: The first refuge record for the species for the season concerned.

(3) Peak Numbers: The greatest number of the species present in a limited interval of time.

(4) Last Seen: The last refuge record for the species during the season concerned.

(5) Production: Estimated number of young produced based on observations and actual counts.

(6) Total: Estimated total number of the species using the refuge during the period concerned.

INT.-DUP. SEC., WASH., D.C.

59317

3-1752
Form NR-2
(April 1946)

UPLAND GAME BIRDS

1613

Refuge Sullys Hill N.G.P. Months of September to December, 1969

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re-stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
R-N Pheasant	Total acres 1,674, 700 acres of marsh and timbered pasture. Remainder is open pasture and hayland.	837			1 hen 1 cock				2	
S-T Grouse	"	209							8	
Gray Partridge	"	139.5							12	

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

(1) SPECIES: Use correct common name.

(2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.

(4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.

(5) REMOVALS: Indicate total number in each category removed during the report period.

(6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.

(7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

3-1753
Form NR-3
(June 1945)

BIG GAME

Refuge Sullys Hill Calendar Year 1969

(1) Species	(2) Density	(3) Young Produced	(4) Removals				(5) Losses			(6) Introductions		(7) Estimated Total Refuge Population		(8) Sex Ratio
Common Name	Cover types, total Acreage of Habitat	Number	Hunting	For Re-stocking	Sold	For Research	Predation	Disease	Winter Loss	Number	Source	At period of Greatest use	As of Dec. 31	
American Bison	700 A. enclosure. Timber on large rolling hills. Approx. 250 A. grass.	6			6							37	31	
Elk	"	7			6							29	23	
W-T Deer	"	9			8*				3			30	22	

Remarks: *Donated to North Dakota Deaf School, Devils Lake, N. D.

Reported by Irvin A. Nelson

INSTRUCTIONS

Form NR-3 - BIG GAME

(1) SPECIES: Use correct common name; i.e., Mule deer, black-tailed deer, white-tailed deer. It is unnecessary to indicate sub-species such as northern or Louisiana white-tailed deer.

(2) DENSITY: Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge: once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.

(3) YOUNG PRODUCED: Estimated total number of young produced on refuge.

(4) REMOVALS: Indicate total number in each category removed during the year.

(5) LOSSES: On the basis of known records or reliable estimates indicate total losses in each category during the year.

(6) INTRODUCTIONS: Indicate the number and refuge or agency from which stock was secured.

(7) TOTAL REFUGE POPULATION: Give the estimated population of <u>each</u> <u>species</u> on the refuge at period of its greatest abundance and also as of Dec. 31.

(8) SEX RATIO: Indicate the percentage of males and females of each species as determined from field observations or through removals.

17060

3-1758
Form NR-8
(Rev. Jan. 1956)

Fish and Wildlife Service Branch of Wildlife Refuges

CULTIVATED CROPS - HAYING - GRAZING

Refuge **Sullys Hill Preserve** County **Benson** State **North Dakota**

Cultivated Crops Grown	Permittee's Share Harvested		Government's Share or Return Harvested		Government's Share or Return Unharvested		Total Acreage Planted	Green Manure, Cover and Waterfowl Browsing Crops Type and Kind	Total Acreage
	Acres	Bu./Tons	Acres	Bu./ Tons	Acres	Bu. /Tons			
Barley	20	800 bu.	10	400 bu.			30		~~30~~
								Fallow Ag. Land.	None

No. of Permittees: Agricultural Operations 1 Haying Operations 3 Grazing Operations None

Refuge Share

Hay - Improved (Specify Kind)	Tons Harvested	Acres	Cash Revenue	Grazing	Number Animals	AUM'S	Cash Revenue	ACREAGE
Alfalfa	70	90	~~8 ton~~ 120	1. Cattle				
Alf-brome	30	80	~~16~~ 240 "					
Alf-Native	20	40	~~8~~ 120 "	2. Other				
Native	10	40	~~8~~ 120 "					
Brome	40	43	~~8~~ 120 "					
				1. Total Refuge Acreage Under Cultivation				30
Hay - Wild				2. Acreage Cultivated as Service Operation				

DIRECTIONS FOR PREPARING FORM NR--8'
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or State.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only thenumber of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvesed column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops Specify the acreage kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting

Total Refuge Acreage Under Cultivation Report total land area devoted to agricultural purposes during the year.

3-1570
NR-88
(4/54)

REFUGE GRAIN REPORT

Refuge Sullys Hill Preserve Months of January through December, 1969

(1) Variety*	(2) On Hand Beginning of Period	(3) Received During Period	(4) Total	(5) Grain Disposed of				(6) On Hand End of Period	(7) Proposed or Suitable Use*		
				Transferred	Seeded	Fed	Total		Seed	Feed	Surplus
Barley	250	400	650	-	-	350	350	300		300	None
Corn	60	-	60	-	-	30	30	30		30	None

(8) Indicate shipping or collection points

(9) Grain is stored at Preserve Hqs.

(10) Remarks

*See instructions on back.

NR-8a

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)—55 lb., corn (ear)—70 lb., wheat—60 lb., barley—50 lb., rye—55 lb., oats—30 lb., soy beans—60 lb., millet—50 lb., cowpeas—60 lb., and mixed—50 lb. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

(1) List each type of grain separately and specifically, as flint corn, yellow dent corn, square deal hybrid corn, garnet wheat, red May wheat, durum wheat, spring wheat, proso millet, combine milo, new era cowpeas, mikado soy beans, etc. Mere listing as corn, wheat, and soybeans will not suffice, as specific details are necessary in considering transfer of seed supplies to other refuges. Include only domestic grains; aquatic and other seeds will be listed on NR–9.

(3) Report all grain received during period from all sources, such as transfer, share cropping, or harvest from food patches.

(4) A total of columns 2 and 3.

(6) Column 4 less column 5.

(7) This is a proposed break-down by varieties of grain listed in column 6. Indicate if grain is suitable for seeding new crops.

(8) Nearest railroad station for shipping and receiving.

(9) Where stored on refuge: "Headquarters granary," etc.

(10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.

INT.-DEP. SEC., WASH., D.C. 17065

3-1979 (NR-12)
(9/63)

Bureau of Sport Fisheries and Wildlife

ANNUAL REPORT OF PESTICIDE APPLICATION

Refuge: Sullys Hill NGP

Proposal Number: 1, 4, 5

Reporting Year: 1969

INSTRUCTIONS: Wildlife Refuges Manual, secs. 3252d, 3394b and 3395.

Date(s) of Application	List of Target Pest(s)	Location of Area Treated	Total Acres Treated	Chemical(s) Used	Total Amount of Chemical Applied	Application Rate	Carrier and Rate	Method of Application
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. June	Poison Ivy & Nettle	Sullys Hill recreation area	spot	Agsco Brush Killer 2 lb. 2,4-D Isoctyl ester/gal. 2 lb. 2,4,5-T Isoctyl ester/gal.	1 quart	2 lbs/acre	½ pt./3 gal.water spot treat	hand sprayer
4. Mid-June	Field Bindweed	Sullys Hill Unit II cropland	30	2,4-D Dimethylamine Salt 4 lb. a.i./gal.	8 gal.	1 lb/acre	5 gal/acre	ground sprayer
5. Late June	Leafy Spurge	Pleasant Lake WPA (Carl Anderson Tract)	95	2,4-D Isoctyl ester 6 lb. a.i./gal.	32 gal.	2 lb/acre	5 gal/acre	ground sprayer

10. Summary of results (continue on reverse side, if necessary)

1. Good results.

4. Good results.

5. Stopped seed production, but did not affect plant.

35500